

UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL RESEARCH SERVICE

in cooperation with

STATE AGRICULTURAL EXPERIMENT STATIONS

Results from the

**UNIFORM OAT WINTER HARDINESS NURSERY**

for 2004-05

Compiled by

D. P. Livingston, Research Agronomist  
R. Premakumar, Chemist

This is a joint progress report of an investigation underway in the State Agricultural Experiment Stations and the Agricultural Research Service of the U. S. Department of Agriculture. It contains preliminary data which have not been sufficiently confirmed to justify general release; interpretations may be modified with additional experimentation. Confirmed results will be published through established channels. The report is primarily a tool for cooperators, their staff and those with special interest in agricultural research program development.

This report was compiled by the Agricultural Research Service, U. S. Department of Agriculture, and is not intended for publication nor should it be referred to in literature citations or quoted in publicity or advertising. Use of the data may be granted for certain purposes upon written request to the agency or agencies involved.

USDA-ARS  
South Atlantic Area  
Department of Crop Science  
North Carolina State University  
Raleigh, NC 27695

## OAT WINTER HARDINESS NURSERY 2004-2005

<b>CONTENTS</b>	<b>Page</b>
Cooperating Agricultural Experiment Stations and Personnel	2
Digest	3
Top Ten Ranked Survival Entries	4
Table 1. Entries in the 2004-05 Uniform Oat Winter Hardiness Nursery	5
Table 2. Winter Survival Data Summary at the Various Stations (sorted by entry no)	6
Table 3. Winter Survival Data Summary at the Various Stations (sorted by rank)	7

### COOPERATING AGRICULTURAL EXPERIMENT STATIONS AND PERSONNEL

<b>Country</b>	<b>State</b>	<b>AES Location</b>	<b>Personnel</b>
USA	AR	Fayetteville	R.K. Bacon
USA	KS	Manhattan	M.Hagny
USA	NC	Laurel Springs	J.P. Murphy
USA	SC	Clemson	B.Edge
USA	SC	Florence	B.Edge
USA	TN	Knoxville	D.West
USA	VA	Blacksburg	C.A. Griffey
Austria		Edelhof	E.Zechner
Czech. Rep		Kromeriz	L.Nedomova
Hungary		Martonvasar	O.B.Veisz
Lithuania		Lithuania	A.Sliesaravicius
Poland		Radzikow	W.Podyma
Sweden		Svalov	R.Jonnson
Turkey		Eskisehir	E.Ozdemir
Turkey		Hamidiye	E.Ozdemir
UK		Aberystwyth, Wales	J.Valentine

NUMBER OF TESTS:	12 ( 5 US States and 6 foreign countries)	
NUMBER OF ENTRIES:	21	
EXPERIMENTAL DESIGN:	Single-row, 5-foot plot	
	Two replications	
	Randomized complete block	
DATA RECORDED:	Percent winter survival	
Data not used in analysis:	Clemson, SC	100% Survival
	Florence, SC	100% Survival

<b>AES</b>	<b>Location</b>	<b>Comments</b>
KS	Manhattan	Unable to plant the nursery.
SC	Clemson	Cool spring but relatively mild winter.
SC	Florence	Cool spring but relatively mild winter.
Austria	Edelhof	Seed: Oct 7, 2004. Relatively warm till Dec. Lots of snow Jan - Mar, really cold 20-23rd Dec; end of Feb.
Hungary	Martonvasar	Until middle of Jan, weather conditions were modest compared to the average, exceeding zero only a few degrees Celsius at nights. From the second half of Jan until Mar it was colder than average but due to snow cover when it was minus 10oC or less, there was not a considerable winter kill.
Lithuania		Did not plant because of late receipt of seeds
Poland	Radzikow	Data collected 4-25-2005 after regrowth symptoms are clearly visible. For wheat and barley checks, the results are 100% and 16% respectively.
Sweden	Svalov	Received nursery too late for planting. Will plant this fall.
Turkey	Eskisehir	This year weather was not so cold. Temperature went down to -12oC for 2 weeks.
Turkey	Hamidiye	Could not get any data.
UK (Wales)	Aberystwyth	Generally no sign of winter damage. Plot Nos 1,2,3,32,34,39 had low germination. Plot nos 28-31 may have been low due to bird damage/grazing rather than winter kill

# Top Ten Ranked Survival Entries

4

Rank	Ent No.	Entry	Pedigree	% Survival (across locations)
1	14	Win/Nor-1	Wintok x Norline	83.8
2	17	Win/Nor-10b	Selection from Win/Nor-10	82.9
3	21	NC01-3981	NC88-1834/NC89-4708//TXAB2923/3/NC91-6448	82.8
4	11	AR0213-10	Coker 84-16/AR1254A	79.4
5	4	Wintok (ck)	CI 3424	76.7
6	9	AR0213-12	Coker 84-16/AR 125-4A	76.7
7	5	AR0336-3	Coker 84-16/AR 125-4A	76.4
8	20	NC01-3908	TAM0386R/2/MADISON/NC87-6/3/NC92-6590	75.9
9	15	Win/Nor-10	Wintok x Norline	74.1
10	16	Win/Nor-10a	Selection from Win/Nor-10	73.6
LSD (0.05)				33.3

**Table 1. Entries in the 2004-2005 Uniform Oat Winter Hardiness Nursery**

Entry No.	Entry Name	Pedigree	No. Yrs. in Nurs.	Contributors	
				Last Name	State
1	Fulghum (ck)	CI 708	67		
2	Norline (ck)	CI 6903	44		
3	Winter Turf (ck)	CI 3296	64		
4	Wintok (ck)	CI 3424	64		
5	AR0336-3	Coker 84-16/AR 125-4A	2	Bacon	AR
6	AR0289-9	TAMO 386/FL501	2	Bacon	AR
7	AR0231-3	PA 8017-26//Simpson/Coker716	2	Bacon	AR
8	AR0336-12	Toms386// Coker86-13/T81-1251	1	Bacon	AR
9	AR0213-12	Coker 84-16/AR 125-4A	1	Bacon	AR
10	AR0336-1	Toms 386// Coker86-13/T81-1251	1	Bacon	AR
11	AR0213-10	Coker 84-16/AR1254A	1	Bacon	AR
12	ARNO-10	Composite	1	Bacon	AR
13	ARNO-7	Composite	1	Bacon	AR
14	Win/Nor-1	Wintok x Norline	2	Livingston, Murphy	NC
15	Win/Nor-10	Wintok x Norline	2	Livingston, Murphy	NC
16	Win/Nor-10a	Selection from Win/Nor-10	1	Livingston, Murphy	NC
17	Win/Nor-10b	Selection from Win/Nor-10	1	Livingston, Murphy	NC
18	NC98-197N	RODGERS SIB//ARFOB30/C84-27	1	Murphy	NC
19	NC99-3802	L409-3(IA TEST WEIGHT)/C716//NC87-80	1	Murphy	NC
20	NC01-3908	TAM0386R/2/MADISON/NC87-6/3/NC92-6590	1	Murphy	NC
21	NC01-3981	NC88-1834/NC89-4708//TXAB2923/3/NC91-6448	1	Murphy	NC

**Table 2. Winter Oat Survival Data Summary (%) at Various Stations (sorted by entry number)**

Ent. No.	Entry	Ranked Means	Means (across loc)	Fayetville AR	Edelhof Austria	Kromeriz Czech Rep	Matnvasar Hungary	Laurel Spngs NC	Radzikow Poland	Knoxville TN	Eskisehir Turkey	Abswth UK	Blksbrg VA
1	Fulghum (ck)	21	39.8	100.0	0.0	5.2	88.5	0.0	24.5	10.0	11.5	93.2	65.0
2	Norline (ck)	15	71.1	100.0	0.0	29.8	100.0	75.0	100.0	100.0	6.0	100.0	100.0
3	Winter Turf (ck)	20	50.9	100.0	0.0	18.1	100.0	5.0	EST=38.4 <sup>#</sup>	50.0	0.0	100.0	97.5
4	Wintok (ck)	5	76.7	100.0	30.0	69.7	94.0	77.5	32.0	100.0	67.5	95.8	100.0
5	AR0336-3	7	76.4	100.0	40.0	56.4	90.5	47.5	73.0	100.0	90.0	73.9	92.5
6	AR0289-9	11	73.4	100.0	12.5	33.7	83.5	67.5	61.5	100.0	87.5	92.8	95.0
7	AR0231-3	16	66.9	70.0	72.5	27.5	93.5	0.5	55.0	100.0	55.0	97.7	97.5
8	AR0336-12	17	64.1	60.0	60.0	17.0	81.0	1.0	53.5	100.0	87.5	96.3	85.0
9	AR0213-12	6	76.7	100.0	90.0	41.3	69.5	35.5	53.0	100.0	82.5	95.3	100.0
10	AR0336-1	18	63.1	100.0	35.0	14.3	70.0	2.5	44.0	100.0	82.5	100.0	82.5
11	AR0213-10	4	79.4	100.0	75.0	57.6	76.5	47.5	69.0	100.0	80.0	90.9	97.5
12	ARNO-10	13	71.3	100.0	57.5	28.8	82.5	5.0	52.0	100.0	87.5	100.0	100.0
13	ARNO-7	12	72.6	100.0	75.0	47.0	78.0	5.5	38.5	100.0	91.0	100.0	91.5
14	Win/Nor-1	1	83.8	100.0	60.0	66.6	87.0	92.5	53.5	100.0	82.5	97.7	98.5
15	Win/Nor-10	9	74.1	100.0	30.0	69.0	77.0	55.0	40.5	100.0	75.0	94.2	100.0
16	Win/Nor-10a	10	73.6	62.5	50.0	54.3	78.5	97.5	49.5	100.0	47.5	96.5	100.0
17	Win/Nor-10b	2	82.9	100.0	67.5	73.7	72.0	72.5	68.5	100.0	77.5	97.7	100.0
18	NC98-197N	14	71.3	100.0	50.0	41.6	93.0	0.5	42.0	100.0	93.5	97.0	95.0
19	NC99-3802	19	60.2	80.0	35.0	3.3	84.0	0.0	37.5	95.0	95.0	84.8	87.5
20	NC01-3908	8	75.9	70.0	82.5	41.8	85.0	47.5	49.0	100.0	87.5	95.6	100.0
21	NC01-3981	3	82.8	100.0	70.0	58.7	86.0	47.5	74.0	100.0	95.0	96.9	100.0
<b>Average</b>			<b>71.2</b>	<b>92.5</b>	<b>47.3</b>	<b>40.7</b>	<b>84.3</b>	<b>37.3</b>	<b>52.8</b>	<b>93.1</b>	<b>70.6</b>	<b>95.1</b>	<b>94.5</b>
<b>LSD (0.05)</b>			<b>33.3</b>		20.1	11.7	17.4	53.6	22.7	25.8	30.4	12.0	5.5
<b>CV(%)</b>			<b>18.9</b>		20.4	13.8	9.9	68.9	20.3	13.3	20.6	6.1	2.8

# Estimated value.No germination

Table 3. Winter Oat Survival Data Summary (%) at Various Stations (sorted by rank)

7

Ent. No.	Entry	Ranked Means	Means (across loc)	Fayetteville AR	Edelhof Austria	Kromeriz Czech Rep	Matnvasar Hungary	Laurel Spngs NC	Radzikow Poland	Knoxville TN	Eskisehir Turkey	Abswth UK	Blksbrg VA
14	Win/Nor-1	1	83.8	100.0	60.0	66.6	87.0	92.5	53.5	100.0	82.5	97.7	98.5
17	Win/Nor-10b	2	82.9	100.0	67.5	73.7	72.0	72.5	68.5	100.0	77.5	97.7	100.0
21	NC01-3981	3	82.8	100.0	70.0	58.7	86.0	47.5	74.0	100.0	95.0	96.9	100.0
11	AR0213-10	4	79.4	100.0	75.0	57.6	76.5	47.5	69.0	100.0	80.0	90.9	97.5
4	Wintok (ck)	5	76.7	100.0	30.0	69.7	94.0	77.5	32.0	100.0	67.5	95.8	100.0
9	AR0213-12	6	76.7	100.0	90.0	41.3	69.5	35.5	53.0	100.0	82.5	95.3	100.0
5	AR0336-3	7	76.4	100.0	40.0	56.4	90.5	47.5	73.0	100.0	90.0	73.9	92.5
20	NC01-3908	8	75.9	70.0	82.5	41.8	85.0	47.5	49.0	100.0	87.5	95.6	100.0
15	Win/Nor-10	9	74.1	100.0	30.0	69.0	77.0	55.0	40.5	100.0	75.0	94.2	100.0
16	Win/Nor-10a	10	73.6	62.5	50.0	54.3	78.5	97.5	49.5	100.0	47.5	96.5	100.0
6	AR0289-9	11	73.4	100.0	12.5	33.7	83.5	67.5	61.5	100.0	87.5	92.8	95.0
13	ARNO-7	12	72.6	100.0	75.0	47.0	78.0	5.5	38.5	100.0	91.0	100.0	91.5
12	ARNO-10	13	71.3	100.0	57.5	28.8	82.5	5.0	52.0	100.0	87.5	100.0	100.0
18	NC98-197N	14	71.3	100.0	50.0	41.6	93.0	0.5	42.0	100.0	93.5	97.0	95.0
2	Norline (ck)	15	71.1	100.0	0.0	29.8	100.0	75.0	100.0	100.0	6.0	100.0	100.0
7	AR0231-3	16	66.9	70.0	72.5	27.5	93.5	0.5	55.0	100.0	55.0	97.7	97.5
8	AR0336-12	17	64.1	60.0	60.0	17.0	81.0	1.0	53.5	100.0	87.5	96.3	85.0
10	AR0336-1	18	63.1	100.0	35.0	14.3	70.0	2.5	44.0	100.0	82.5	100.0	82.5
19	NC99-3802	19	60.2	80.0	35.0	3.3	84.0	0.0	37.5	95.0	95.0	84.8	87.5
3	Winter Turf (ck)	20	50.9	100.0	0.0	18.1	100.0	5.0	EST=38.4 <sup>#</sup>	50.0	0.0	100.0	97.5
1	Fulghum (ck)	21	39.8	100.0	0.0	5.2	88.5	0.0	24.5	10.0	11.5	93.2	65.0
<b>Average</b>			<b>71.2</b>	<b>92.5</b>	<b>47.3</b>	<b>40.7</b>	<b>84.3</b>	<b>37.3</b>	<b>52.8</b>	<b>93.1</b>	<b>70.6</b>	<b>95.1</b>	<b>94.5</b>
<b>LSD (0.05)</b>			<b>33.3</b>		20.1	11.7	17.4	53.6	22.7	25.8	30.4	12.0	5.5
<b>CV(%)</b>			<b>18.9</b>		20.4	13.8	9.9	68.9	20.3	13.3	20.6	6.1	2.8

# Estimated value. No germination..